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CIBA GEIGY CORP. 12 \*US 4558-145-A  
21.10.83-US-544296 (10.10.85) C074-15/2  
Ferric N-(2-hydroxyethyl) ethylene:di:amine tri acetic acid prepn. -  
by reacting iron powder with nitric acid and hydroxy-EDTA, oxidising  
and adjusting pH  
C86-003073

Prepn. of ferric OH-EDTA complex (I) comprises  
(1) adding nitric acid to an aq. soln. of 2/3 rd the  
stoichiometric equiv. of trisodium N-(2-hydroxyethyl)-  
ethylenediaminetriacetic acid based on Fe to adjust the pH to  
1.0 to 1.4;  
(2) adding powdered iron at below 70°C to form a ferrous  
chelate;  
(3) adding trisodium N-(2-hydroxyethyl)ethylenediamine-  
triacetic acid to complete the stoichiometric requirement  
therefor;  
(4) contacting the resulting chelate with an oxygen source  
at 50-90°C to convert the ferrous chelate to ferric chelate;  
(5) adjusting the pH of the soln. to 5.0 to 6.0 to give a  
soln. contg. < 1% free OH-EDTA and 5.0 - 5.5 wt.% Fe in  
chelated form.

USE/ADVANTAGE

The chelates are used to correct iron deficiencies in soils.

C(5-A3A, 10-B1B, 12-N9) 3

The process has the advantage of increased yields of (I) over  
prior art methods of prepn.

REACTION CONDITIONS

The iron powder is pref. of 60 mesh and added portion-  
wise keeping the temp. below 70°C. The oxidn. of the ferr-  
ous complex to ferric is carried out by bubbling through air  
or oxygen with stirring.

EXAMPLE

708 HNO<sub>3</sub> (252 g) was added to a 44.8% soln. of trisodium  
HO-EDTA (470 mg) to adjust the pH to 1.2 and then iron  
powder (40 mesh) (54.7 g) was added over a 2 hr. period  
to give a green aq. chelate soln. Further trisodium HO-EDTA  
was added and then air bubbled through at 90°C. After 2.5  
hr., the colour of the soln. changed to red and the pH was  
adjusted to 5.2 - 5.8 with HNO<sub>3</sub> to give the ferric chelate. (4pp  
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→ **US4558145A** **Title:** PREPARATION OF FE CHELATES**Application Date:** 19831021**Application No:** 83 544296**Publication Date:** 19851210**IPC:** C07F01502**National Classification:** 556148**Inventor(s):** SMITH; NELSON; STUTTS; JOSEPH W.**Applicant(s):** CIBA GEIGY CORPORATION**Priority:** US 83 544296 831021 A**Legal Status:**

Date	+/-	Code	Description
19831021		AE	APPLICATION DATA (PATENT) US 1983 544296 A 19831021
19850925		AS02	ASSIGNMENT OF ASSIGNOR'S INTEREST CIBA-GEIGY CORPORATION, 444 SAW MILL RIVER ROAD, ARDSLEY, NEW YORK, A CORP. OF N * SMITH, NELSON : 19831013; STUTTS, JOSEPH W. : 19831013
19851210		A	PATENT
19900227	(-)	FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE 891210

